

WHAT IS CLAIMED IS:

1. A plane light source unit comprising:

5 a light pipe including an upper surface, a lower surface, and an incidence side surface, and including a light output means formed in said upper surface so that light incident on said incidence side surface exists from said lower surface through said light output means while light incident on said lower surface is transmitted through said upper surface; and

10 a linear light source disposed on said incidence side surface of said light pipe, said linear light source having an effective light emission region which is longer than a longitudinal length of said incidence side surface,

15 whereby information light generated on the lower surface of said light pipe is transmitted and made visible through the upper surface of said light pipe.

20 2. A plane light source unit according to claim 1, wherein said light output means of said light pipe has a repetitive structure of prism-like irregularities arranged at intervals of a pitch in a range of from 50  $\mu\text{m}$  to 1.0 mm, each of said prism-like irregularities being constituted by a combination of a short side surface and a long side surface; said short side surface is made of a slope inclined down from said incidence side surface toward an end side opposite to said incidence side surface at an inclination angle in a range of

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from 30 to 45 degrees with respect to a reference plane of said lower surface; and said long side surface is made of a slope having an inclination angle in a range of from 0 to 10 degrees with respect to said reference plane, so that difference between the inclination angles being not larger than 5 degrees as a whole, the difference between the inclination angles of adjacent long side surfaces is not larger than 1 degree, and a projected area of said long side surface on said reference plane is not smaller than five times as large as that of said short side surface.

3. A plane light source unit according to claim 2, wherein said prism-like irregularities constituting said light output means of said light pipe have ridgelines each having an inclination in a range of  $\pm 30$  degrees with respect to a reference plane of said incidence side surface.

4. A plane light source unit according to claim 3, wherein each of ends of said effective light emission region of said linear light source is protruded by a distance not smaller than a value calculated by an expression:  $1 \text{ mm} + d \cdot \sin \theta + d/2$ , from a corresponding end surface of said light pipe on the basis of a side in which said ridgeline of said prism-like irregularities of said light pipe drifts apart from said linear light source, when  $\theta$  is an inclination angle of said ridgeline

of said prism-like irregularities with respect to said incidence side surface, and d is a distance between said incidence side surface and a front end surface of said linear light source.

5            5.     A reflection type liquid-crystal display device comprising a plane light source unit according to claim 1, and a liquid-crystal cell disposed on a lower surface of said plane light source unit, said liquid-crystal cell including a reflection layer.

10           6.     A reflection type liquid-crystal display device comprising a plane light source unit according to claim 2, and a liquid-crystal cell disposed on a lower surface of said plane light source unit, said liquid-crystal cell including a reflection layer.

15           7.     A reflection type liquid-crystal display device comprising a plane light source unit according to claim 3, and a liquid-crystal cell disposed on a lower surface of said plane light source unit, said liquid-crystal cell including a reflection layer.

20           8.     A reflection type liquid-crystal display device comprising a plane light source unit according to claim 4, and a liquid-crystal cell disposed on a lower surface of said plane

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